

TA-N7/N7B

TA-N7 (Panel: Silver)

AEP Model

UK Model

TA-N7B (Panel: Black)

AEP Model

UK Model

US Model

Canadian Model



TA-N7 (AEP, UK model)

STEREO POWER AMPLIFIER

SPECIFICATIONS

GENERAL


Power Requirements: 240V ac, 50/60Hz (UK model)
220V ac, 50/60Hz (AEP model)
120V ac, 60Hz (US, Canadian model)

Power Consumption: 480W (UK model)
420W (AEP model)
160W (US model)
350VA (Canadian model)


Dimensions: Approx.
430(W) x 170(h) x 335(d) mm
17(w) x 6½(h) x 13¼(d) inches
Including projecting parts and controls

Weight: (UK, AEP model)
Approx. 20.1kg, 44 lb 5 oz (net)
Approx. 22.6kg, 49 lb 14 oz
(with shipping carton)
(US, Canadian model)
Approx. 21kg, 46 lb 5 oz (net)
Approx. 23.6kg, 52 lb 1 oz
(with shipping carton)

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND  MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ !

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

—Continued on page 2—

SONY®

SERVICE MANUAL

POWER AMPLIFIER SECTION

Continuous RMS Power Output: Both channels driven simultaneously
(Less than 0.01% THD) At 20–20,000 Hz
100W + 100W (8Ω)
According to DIN 45500 (AEP, UK model)
100W + 100W (8Ω)

Power Bandwidth: 5–35,000 Hz (8Ω), IHF (AEP, UK model)

Damping Factor: 100 (8Ω, 1kHz)

Harmonic Distortion: Less than 0.01% at rated output
Less than 0.008% at 1W/10W output

Less than 0.01% at 250mW—rated output
(US, Canadian model)

IM Distortion: Less than 0.01% at rated output
(60Hz: 7kHz = 4:1) Less than 0.008% at 1W/10W output

Frequency Response: DC–100,000Hz ± 1 dB (DIRECT INPUT)
6–100,000Hz ± 1 dB (C COUPLED INPUT)
Greater than 120 dB, short-circuited input

S/N Ratio: Greater than 120 dB, short-circuited input

Residual Noise: Less than 0.024mV (8Ω) weighting network A

Inputs:	Sensitivity	Impedance
DIRECT	1.3V (for rated output)	50kΩ
C COUPLED (3Hz cut-off frequency)		

Outputs: SPEAKER terminals:
Accept speakers of 8Ω or more

• MODEL IDENTIFICATIONS

– Specification Label –

AEP model (TA-N7)

SONY®	STEREO AMPLIFIER
	MODEL NO. TA-N7
	AC 220V ~ 50/60Hz 420W SERIAL NO. MADE IN

UK model (TA-N7)

SONY®	STEREO AMPLIFIER
	MODEL NO. TA-N7
	AC 240V ~ 50/60Hz 480W SERIAL NO. MADE IN

AEP model (TA-N7B)

SONY®	STEREO AMPLIFIER
	MODEL NO. TA-N7B
	AC 220V ~ 50/60Hz 420W SERIAL NO. MADE IN

UK model (TA-N7B)

SONY®	STEREO AMPLIFIER
	MODEL NO. TA-N7B
	AC 240V ~ 50/60Hz 480W SERIAL NO. MADE IN

US model (TA-N7B)

SONY®	STEREO AMPLIFIER
	MODEL NO. TA-N7B
	AC 120V 60Hz 160W SERIAL NO. MADE IN


Canadian model (TA-N7B)


SONY®	STEREO AMPLIFIER
	MODEL NO. TA-N7B
	AC 120V 60Hz 350VA SERIAL NO. MADE IN

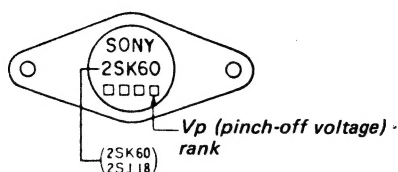
SERVICING NOTES

- This set uses bipolar transistors and V-FETs in cascade circuit to maintain stable biasing. When replacing the three P-channel V-FETs 2SK60 and/or the three N-channel V-FETs 2SJ18 in each channel, use three matched ones which have the same V_p (pinch-off voltage)-rank figure printed on them as shown below. The fluctuation of the V_p rank of the three can be acceptable on one-rank-difference basis.

- Two kinds of hexagonal-socket screw-drivers are required for the following removal.

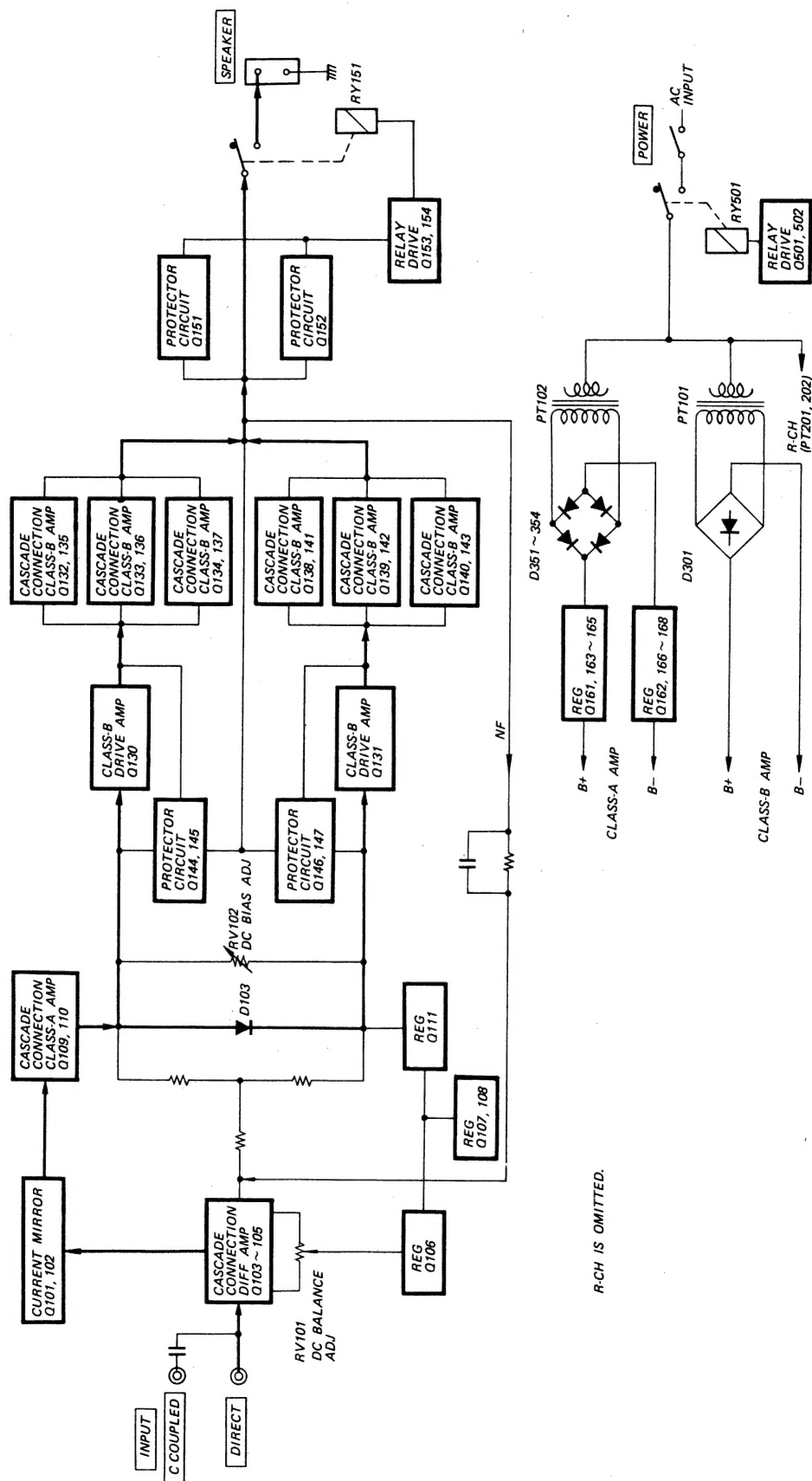
 2.5mm : top cover removal

 4mm : side plate removal



SECTION 1 OUTLINE

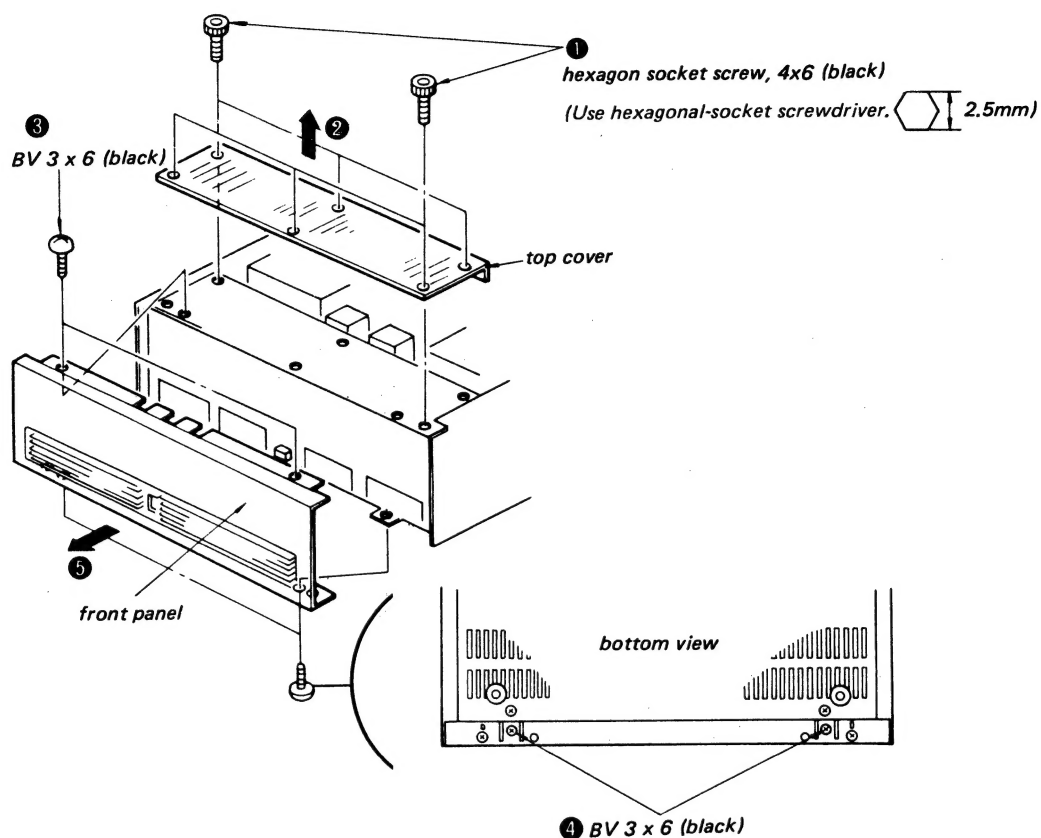
1-1. BLOCK DIAGRAM



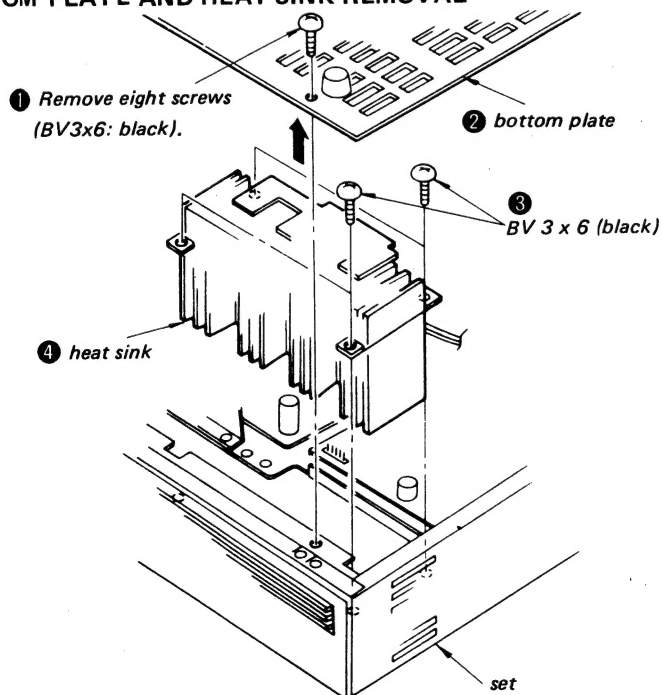
SECTION 2 DISASSEMBLY

Remove the parts in the numerical order.

FRONT PANEL REMOVAL



BOTTOM PLATE AND HEAT SINK REMOVAL



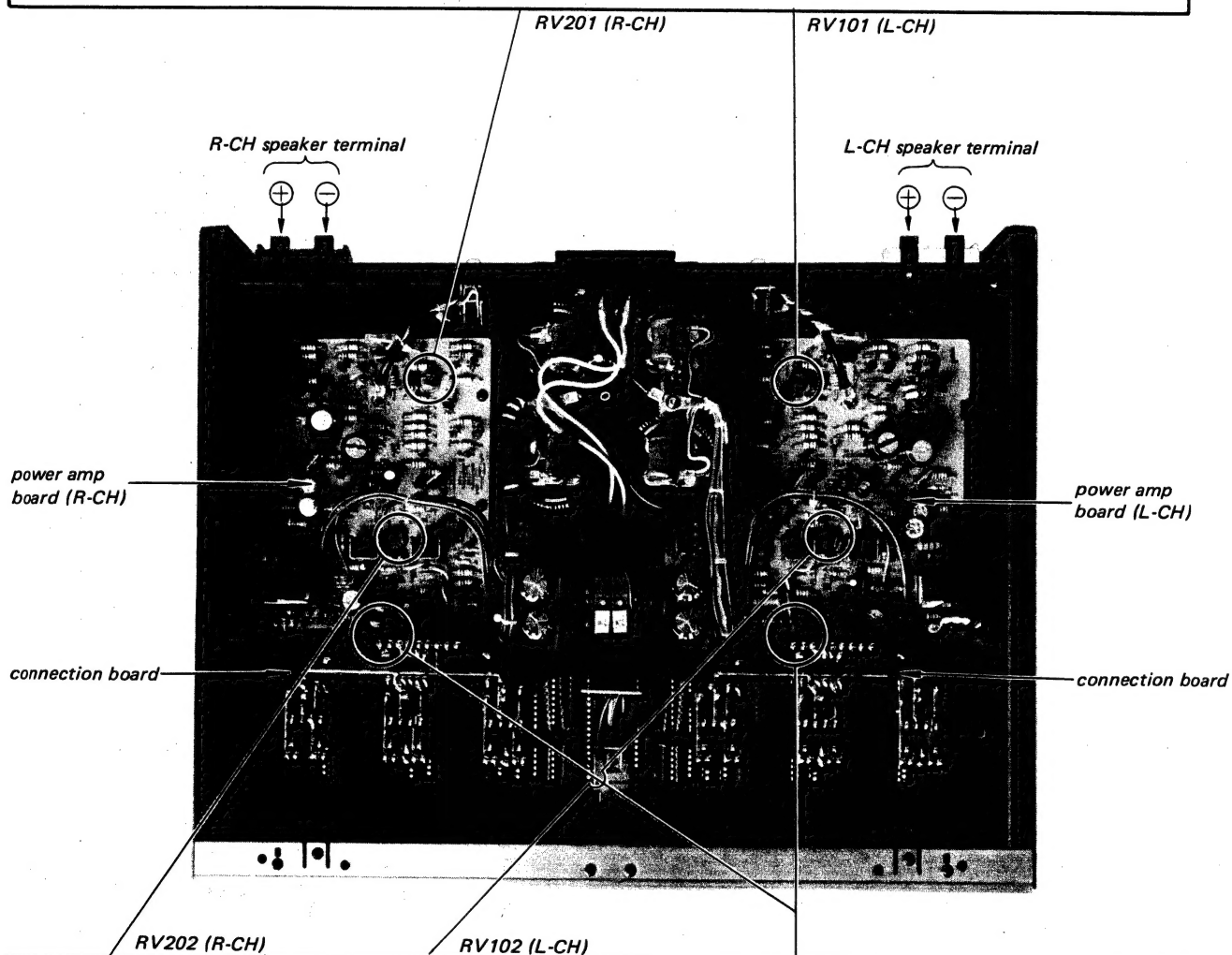
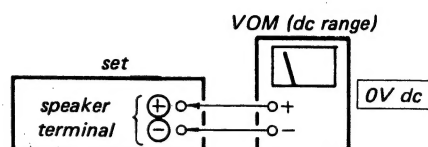
SECTION 3 ADJUSTMENT

Note:

1. Apply the rated ac line voltage to the set directly. Do not increase the voltage gradually by using a variable transformer or other such instrument; this will cause a V-FET failure.
2. Turn the set on and wait a few minutes for warm-up.
3. Alternately repeat the two adjustments 2 or 3 times.

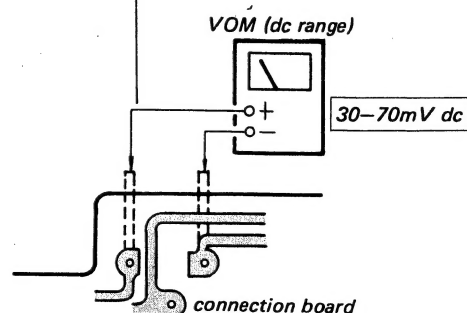
DC Balance Adjustment

Adjust RV101(L-CH) and RV201 (R-CH) for 0V dc with no signal input.



DC Bias Adjustment

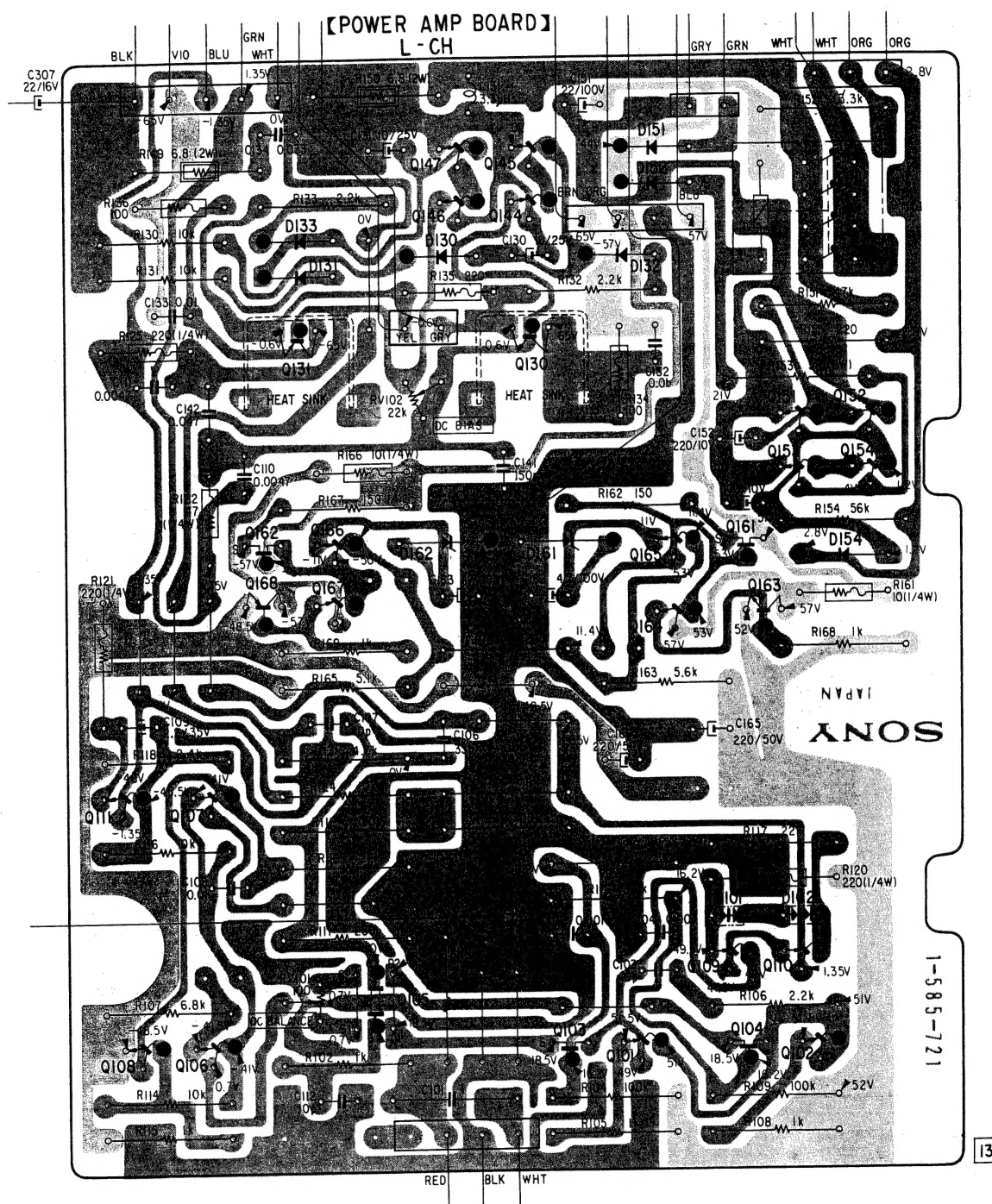
Adjust RV102 (L-CH) and RV202 (R-CH) for 30–70 mV dc with no signal input.



SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM – L-CH Power Amp Board – – Conductor Side –

- **Replacement Semiconductors:** See page 8.



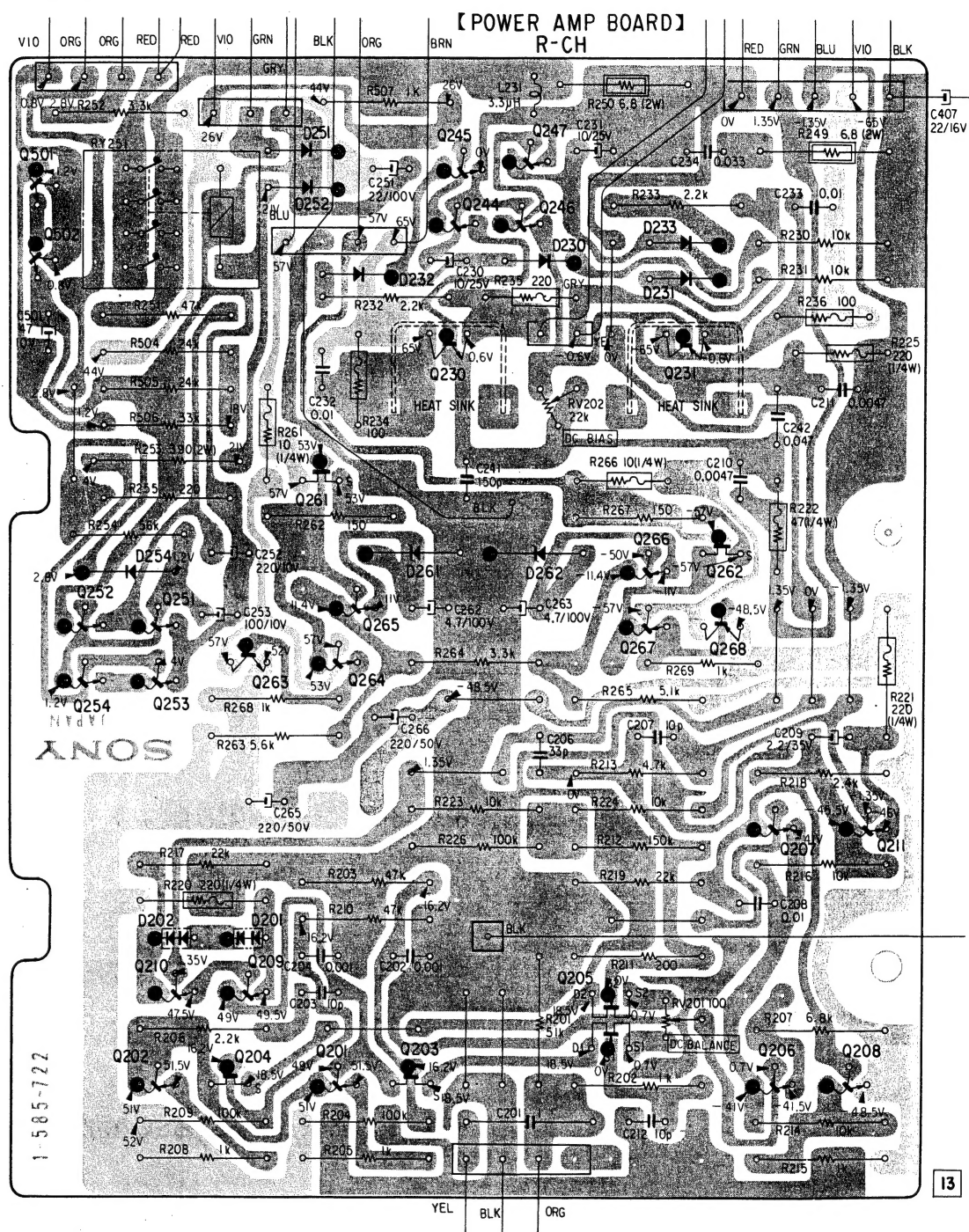
Q	III 108	107 106	162 168	131 167	166 105	147 146	145 144 130	103	101	165 164	161 109	151 153 110	152 154 102
D			133 131			130 162		161	132	151 152		101	102 154

- : B + pattern
-  : B - pattern
- : nonflammable resistor
-  : fusible resistor.

4-2. MOUNTING DIAGRAM – R-CH Power Amp Board –

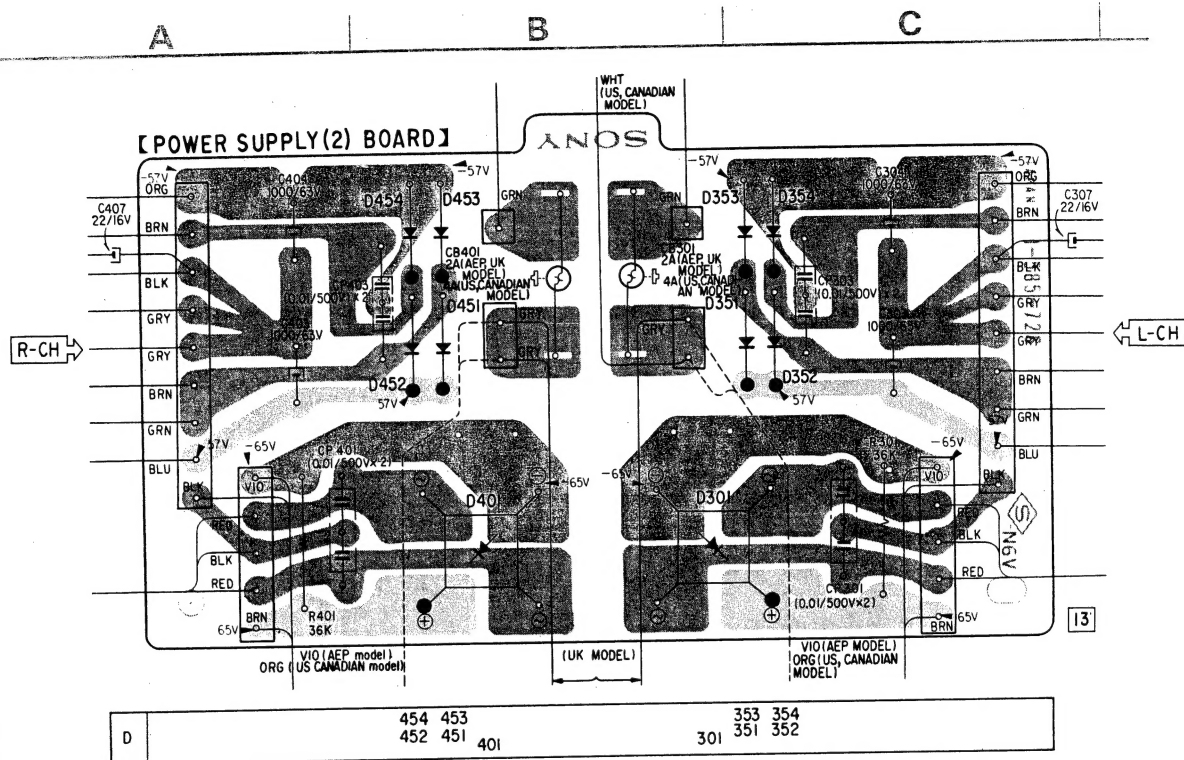
– Conductor Side –

● Replacement Semiconductors: See page 8.



Q	501 502	252 254	251 253 202	263 210 209	261 264 201	265 203	245 244 230	247 246	266 205	231 267	262 268	207 206	211 208
D		254	202	201	251 252	232 261		230 262		233 231			

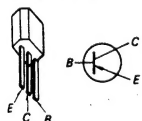
- B+ pattern
- B - pattern
- : nonflammable resistor
- : fusible resistor.



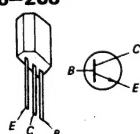
• Replacement Semiconductors

For replacement, use semiconductors except in ().

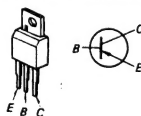
Q101, 102, 144
147, 166, 167
201, 202, 244
247, 266, 267 : 2SA678



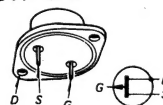
Q106-108
206-208 : 2SC926A



Q131, 231: 2SA835



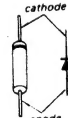
Q141-143
241-243 : 2SJ18



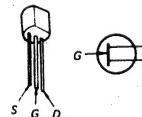
D130-133
230-233 : 1S1555

D151, 152
251, 252
351-354
451-454 : 10E2

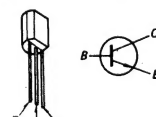
D154, 254: 1T22AM
(1T22A)



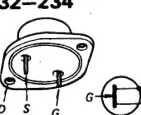
Q103, 104
203, 204 : 2SK30A



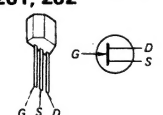
Q145, 146, 151-154
245, 246, 251-254
164, 165, 264, 265
501, 502 : 2SC1364



Q132-134
232-234 : 2SK60



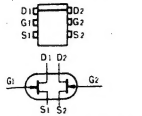
Q161, 162
261, 262 : 2SK42-2



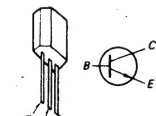
D161, 162
261, 262 : EQB01-11Z



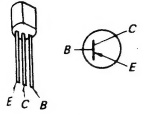
Q105, 205: 2SK97



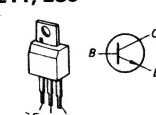
(2SC634A)



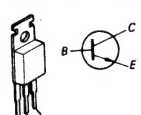
Q109, 209: 2SA639S



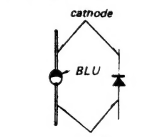
Q111, 130
211, 230 : 2SC 1962



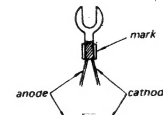
Q135-137
235-237 : 2SC1173
Q163, 263 : 2SC1061



D101, 102
201, 202 : MV12N



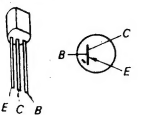
D103, 203: SV04S
(SV04F)



D301, 401: S5VB20



Q110, 210 : 2SA896



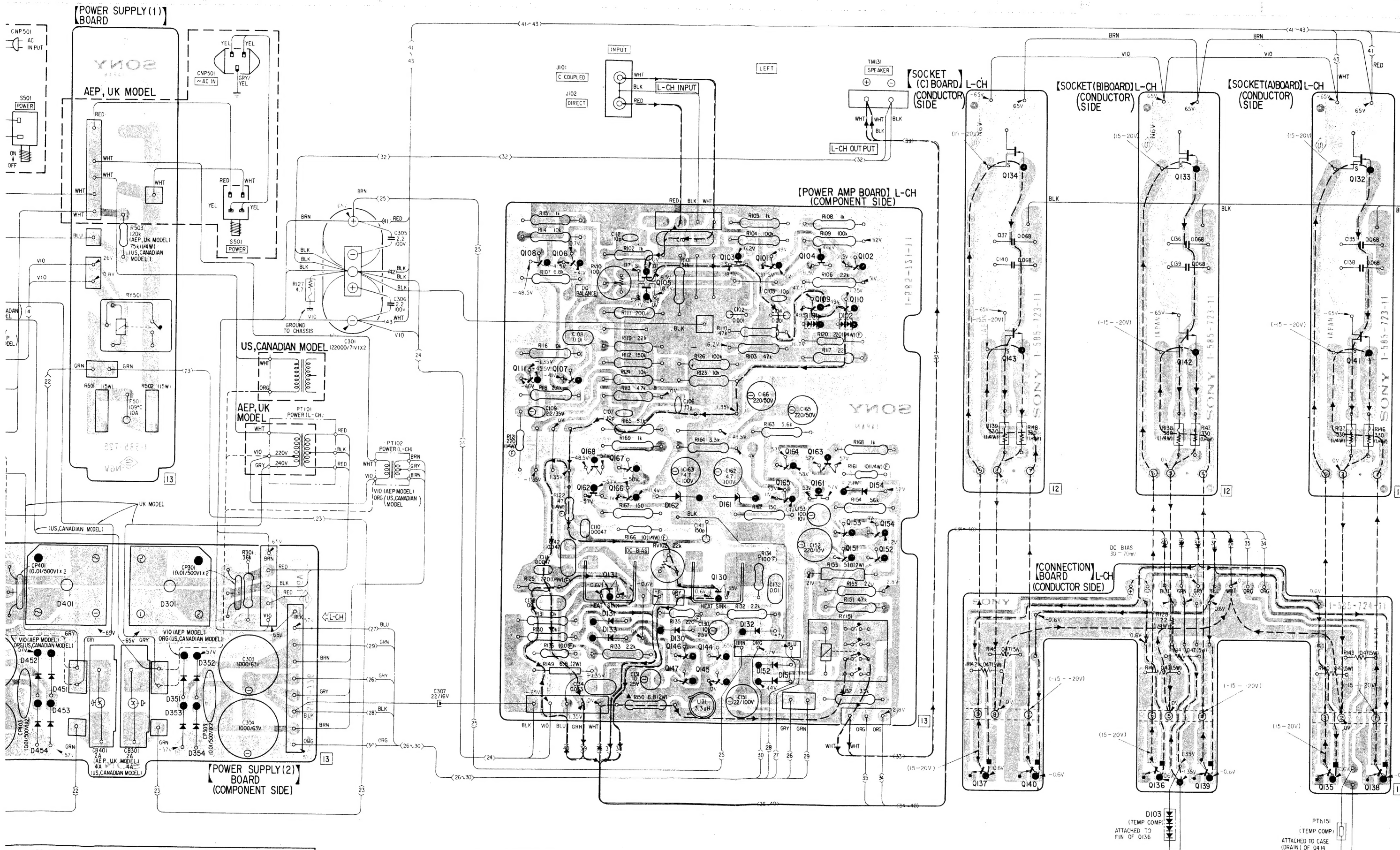
TA-N7/N7B TA-N7/N7B

- : B + pattern
- —→ : signal path
- ▲ : nonflammable resistor
- (F) : fusible resistor.

- power
amp
(R-CH)



Q	108 111	106 107	168 162	131	167 166	105	146 147	130 144 145	103	101	164 165
D				131 133			162 130		161	132	152 151



452 451 401
454 453

301 351 352
353 354

Q	111	108	106	168	131	167	105	146	130	103	101	164	109	104	163	102	154	134	133	132				
			107	162		166		147	144			165		161		110	152	143	142					
								145	145							153	151							
D				131				162		161	132	152	101			102	154	137	140	136	139	135	138	
				133				130				151												
																	</							

4-5. MOUNTING DIAGRAM — R-CH Power Amp Board —

— Component Side —

● Replacement Semiconductors: See page 8.

● : B + pattern

● — — — : signal path

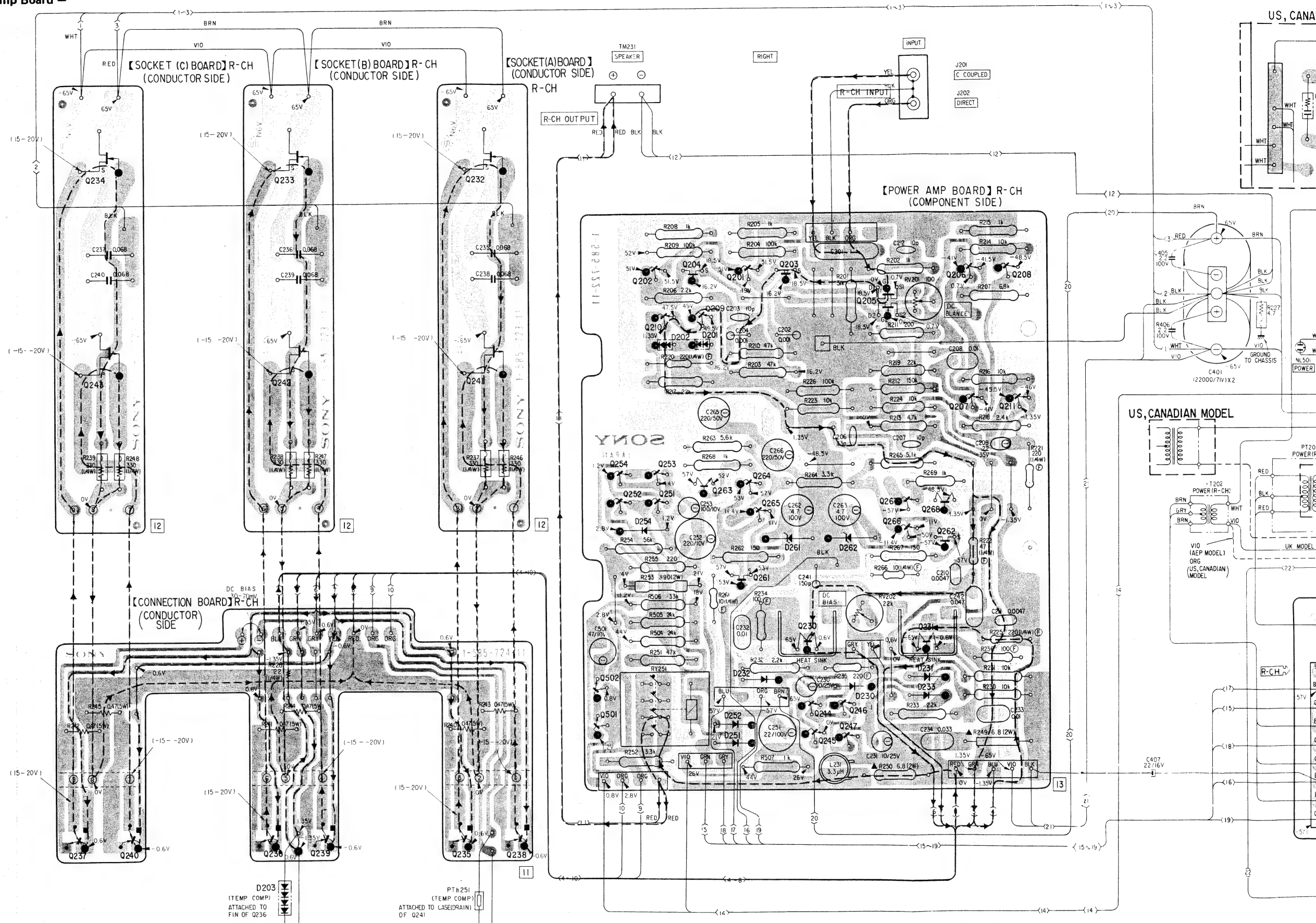
● ▲ : nonflammable resistor.

● (F) : fusible resistor.

● Voltages are dc with respect to ground unless otherwise noted.

● Readings are taken under no signal conditions with a VOM (20k Ω /V).

() : voltage variations according to the rank of V-FET.



Socket Board Installation

connection board

socket board

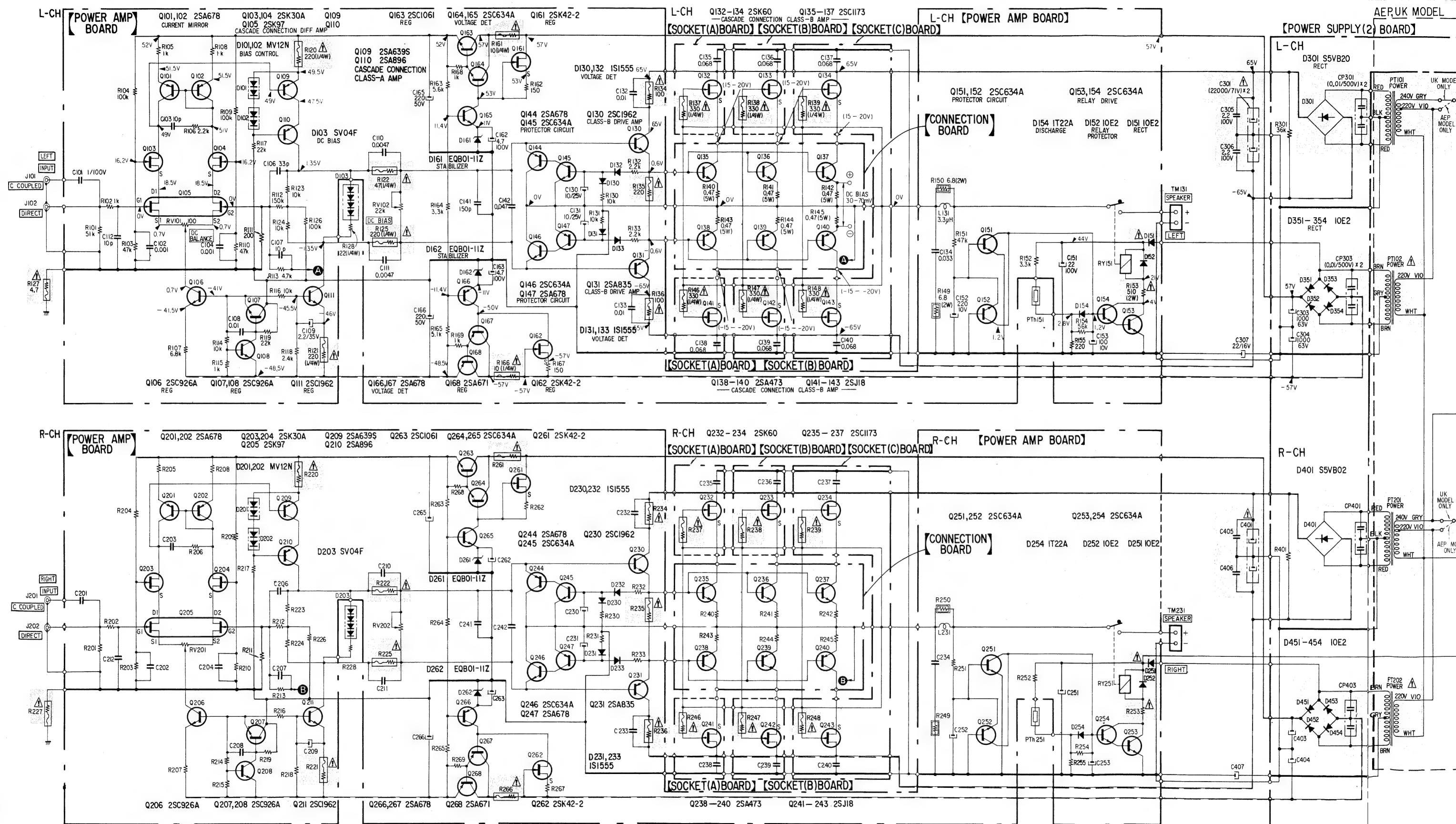
heat sink

Q	237	234	240		233	232		502	254	210	204	209	261	201	265	203	230	246	205	267	231	268	206	208		Q
	243				236	241	238	501	252	202	203	263	264	262	266	244	247		266	262	262	207		211		
D					203					254	202	201	252	232	261		262	230		231	233					D

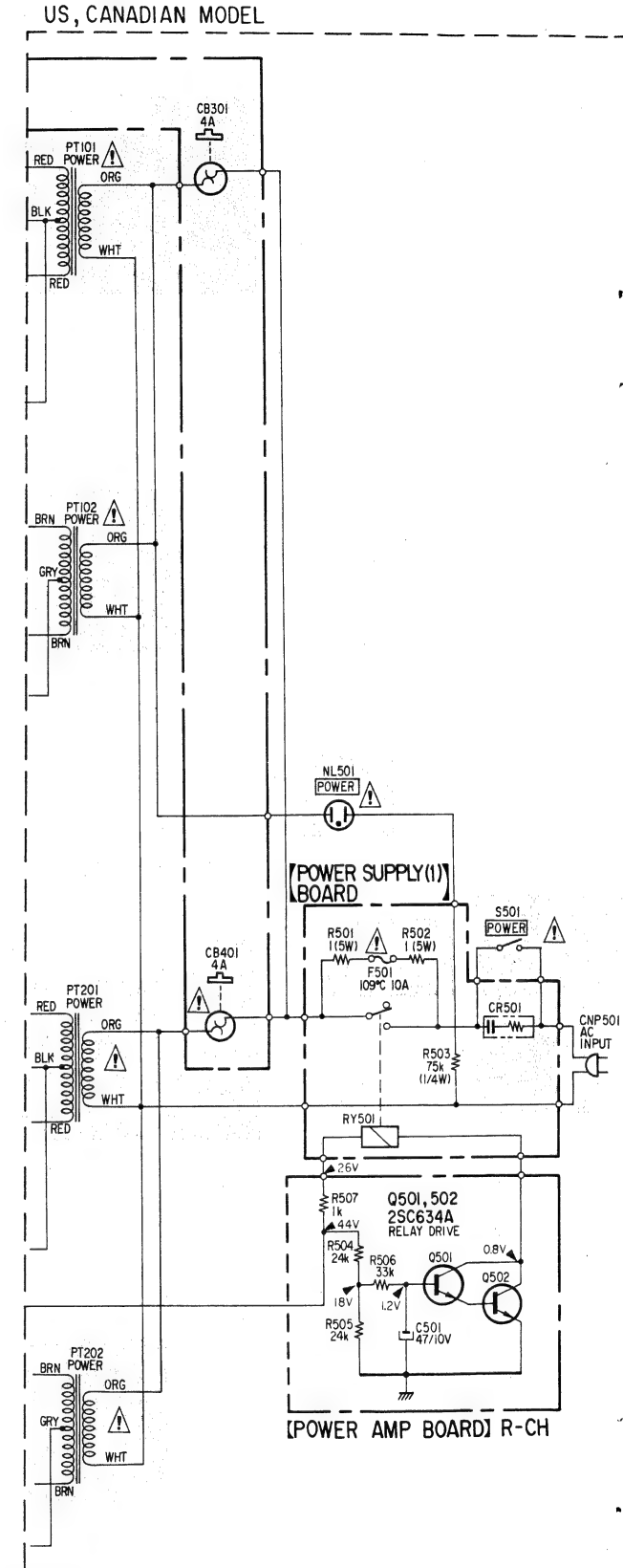
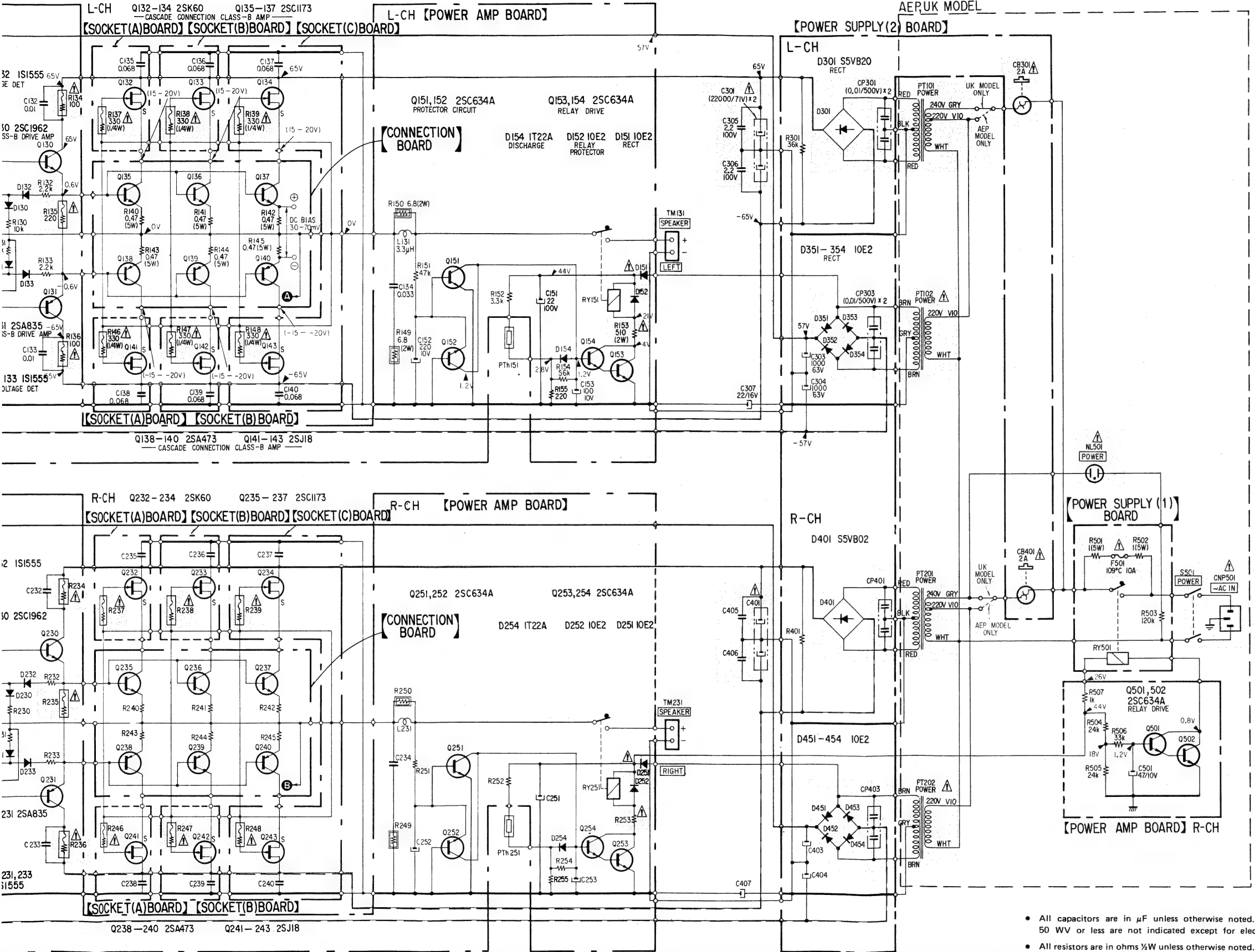
4-6. SCHEMATIC DIAGRAM

Note: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



Composants identifiés par un trame et une marque
critiques pour la sécurité. Ne les remplacer que par
un équivalent portant le numéro spécifié.



- All capacitors are in μF unless otherwise noted. $pF = \mu F \times 10^{-12}$.
- All resistors are in ohms $\frac{1}{2}W$ unless otherwise noted. $k\Omega = 1000\Omega$, $M\Omega = 1000k\Omega$.
- : nonflammable resistor.
- : fusible resistor.
- : B+ bus.
- : B- bus.
- : panel designation.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20k Ω/V).
- () : voltage variations according to the rank of V-FET.
- Switch

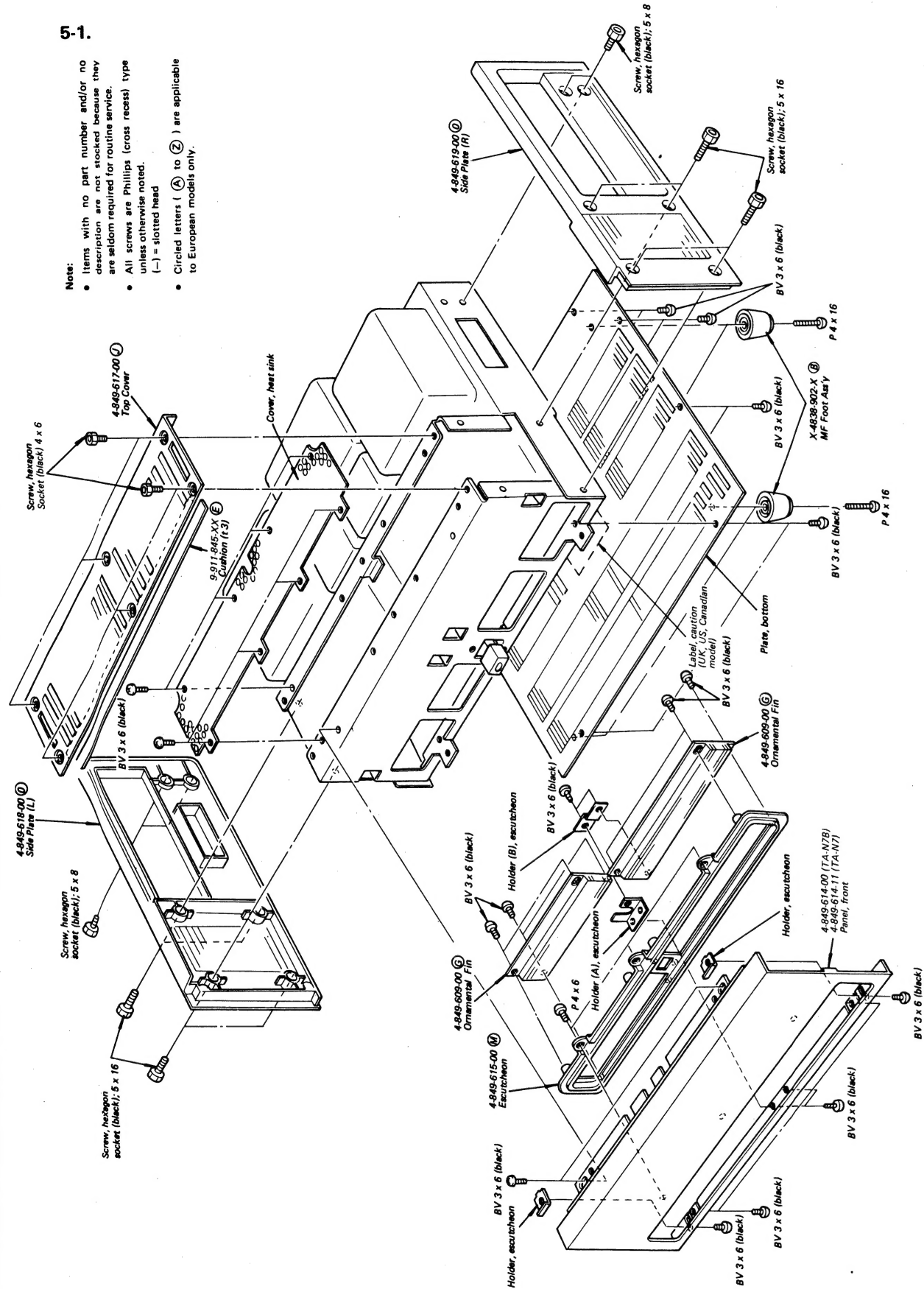
Ref. No.	Switch	Position
S501	POWER	OFF

SECTION 5

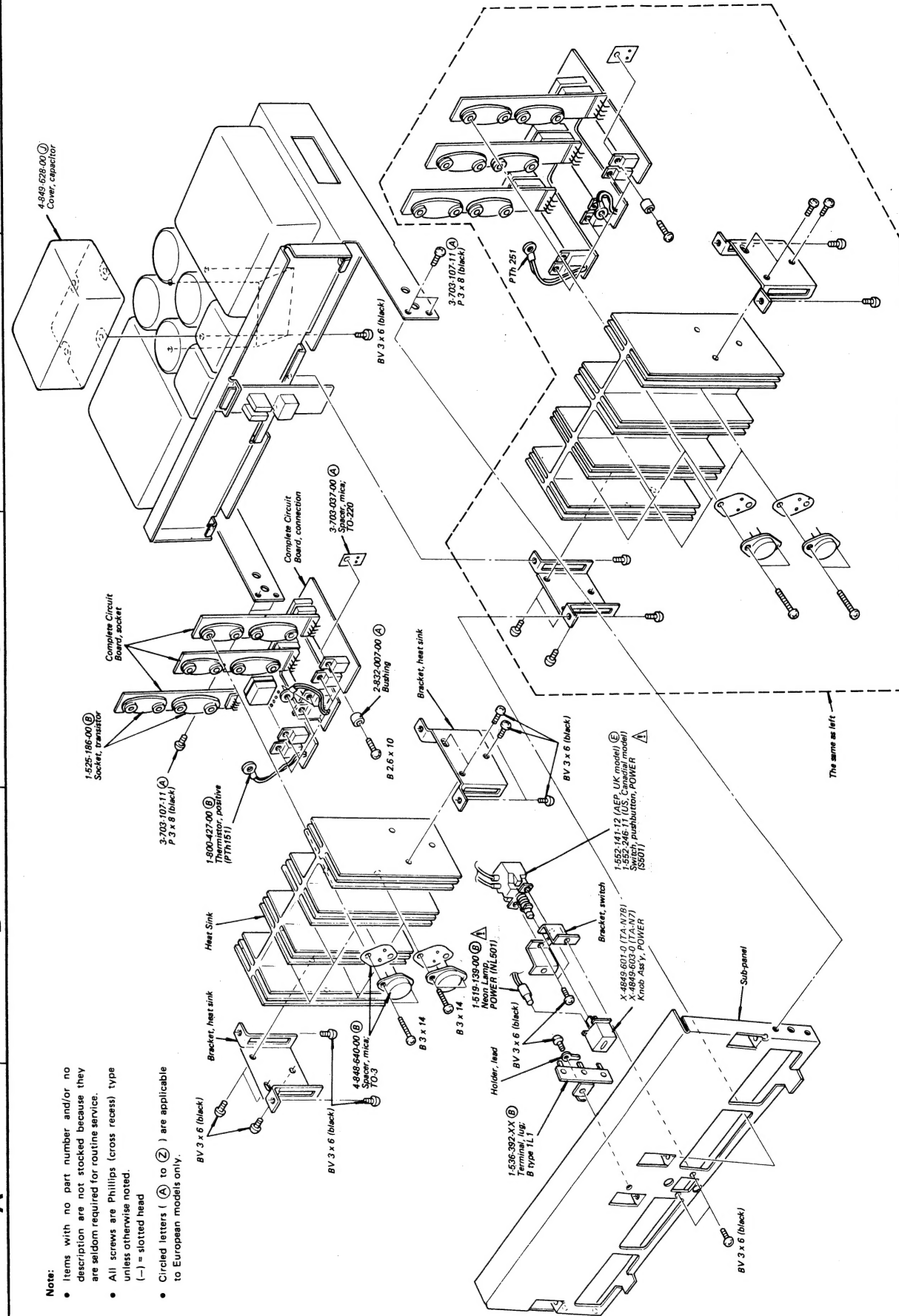
EXPLODED VIEWS


5-1.

- Note:**
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
 - All screws are Phillips (cross recess) type unless otherwise noted.
(—) = slotted head
 - Circled letters (**A**) are applicable to European models only.



5-2.



Note: The components identified by shading and  mark are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

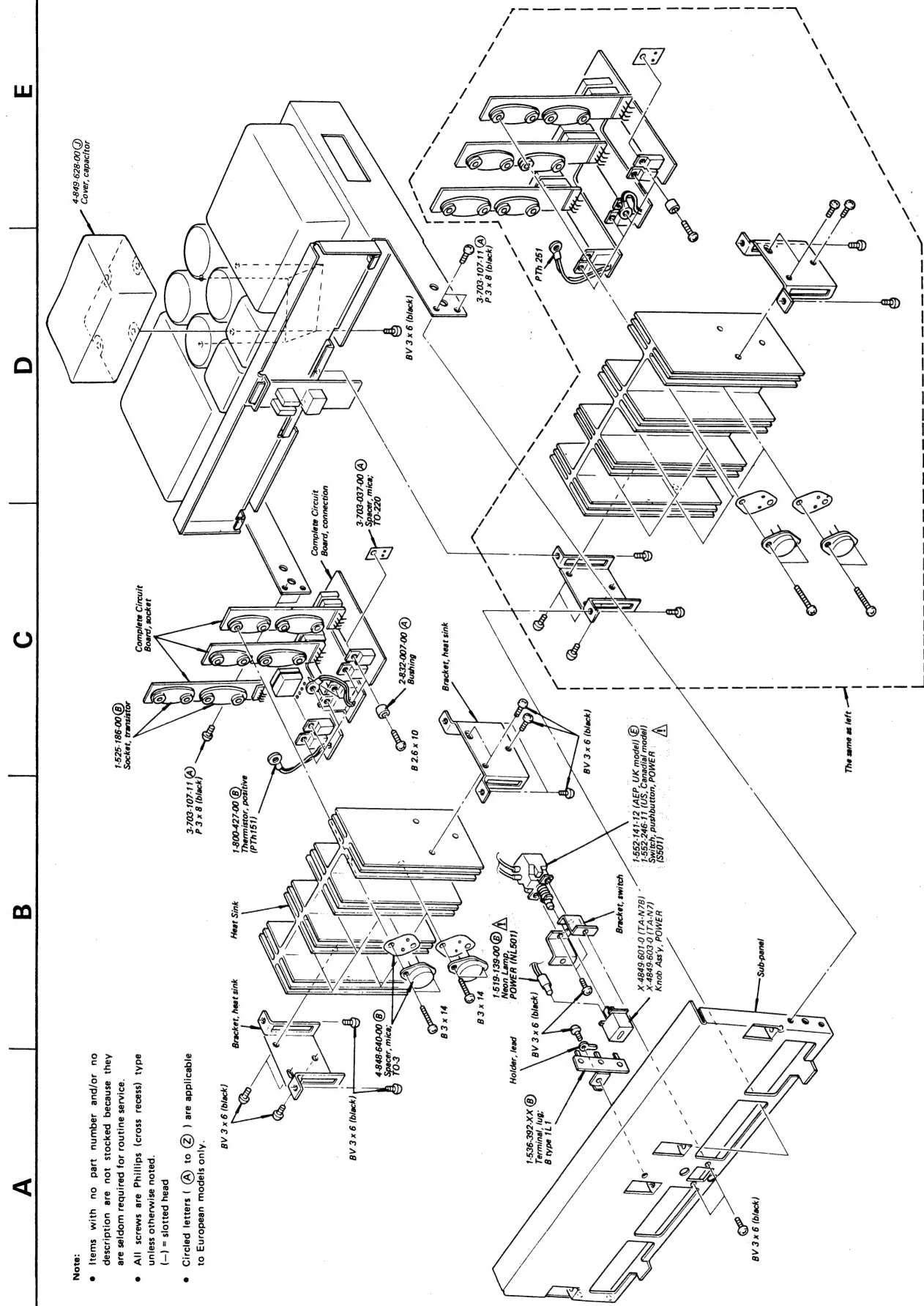
5-3.

1-535-195-21 (F)
Terminal Strip, 2P;
LEFT SPEAKER (TM131)

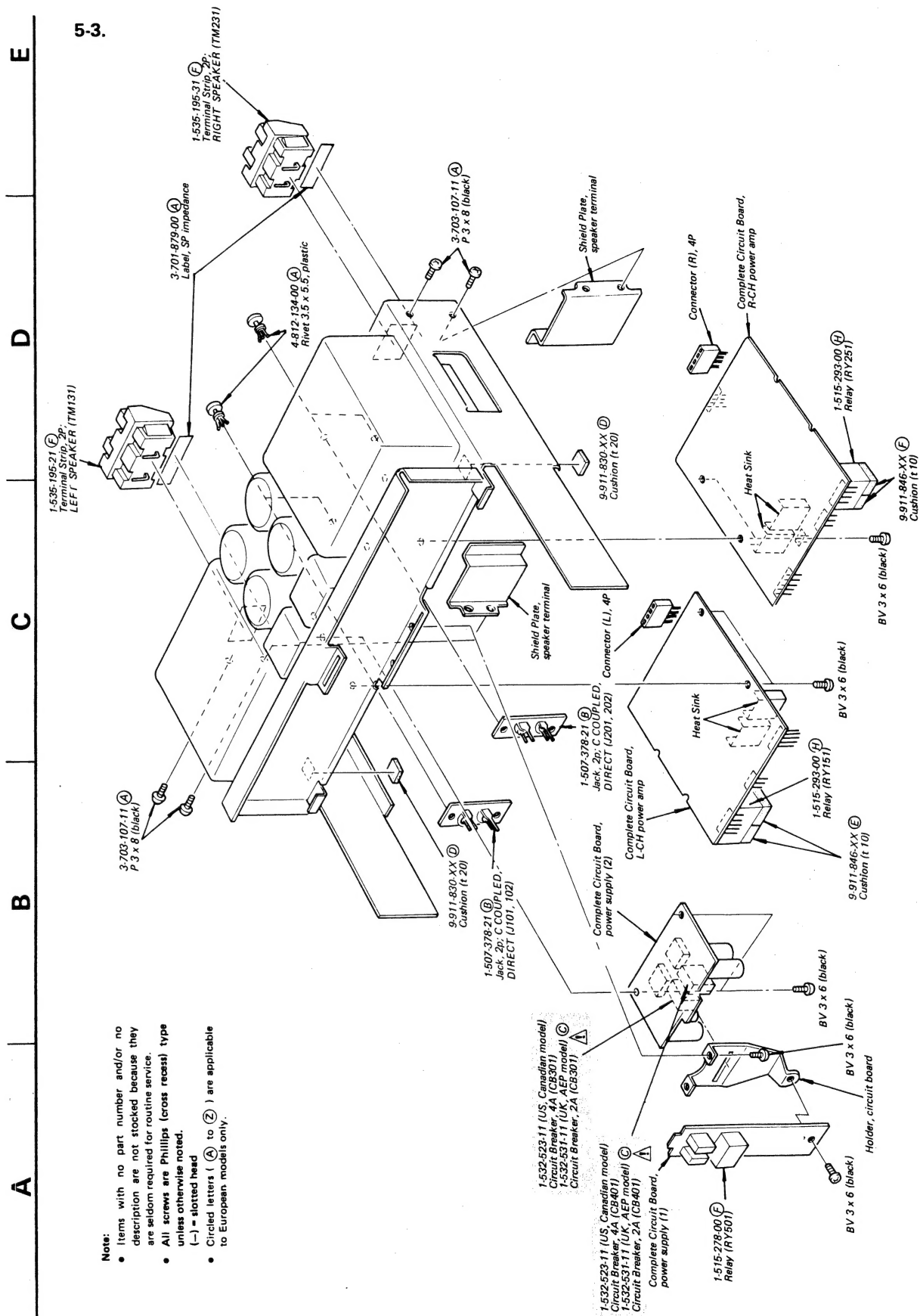
Note:
• Items with no part number and/or no

2.702.107.11 (Δ)

5-2.



5-3.

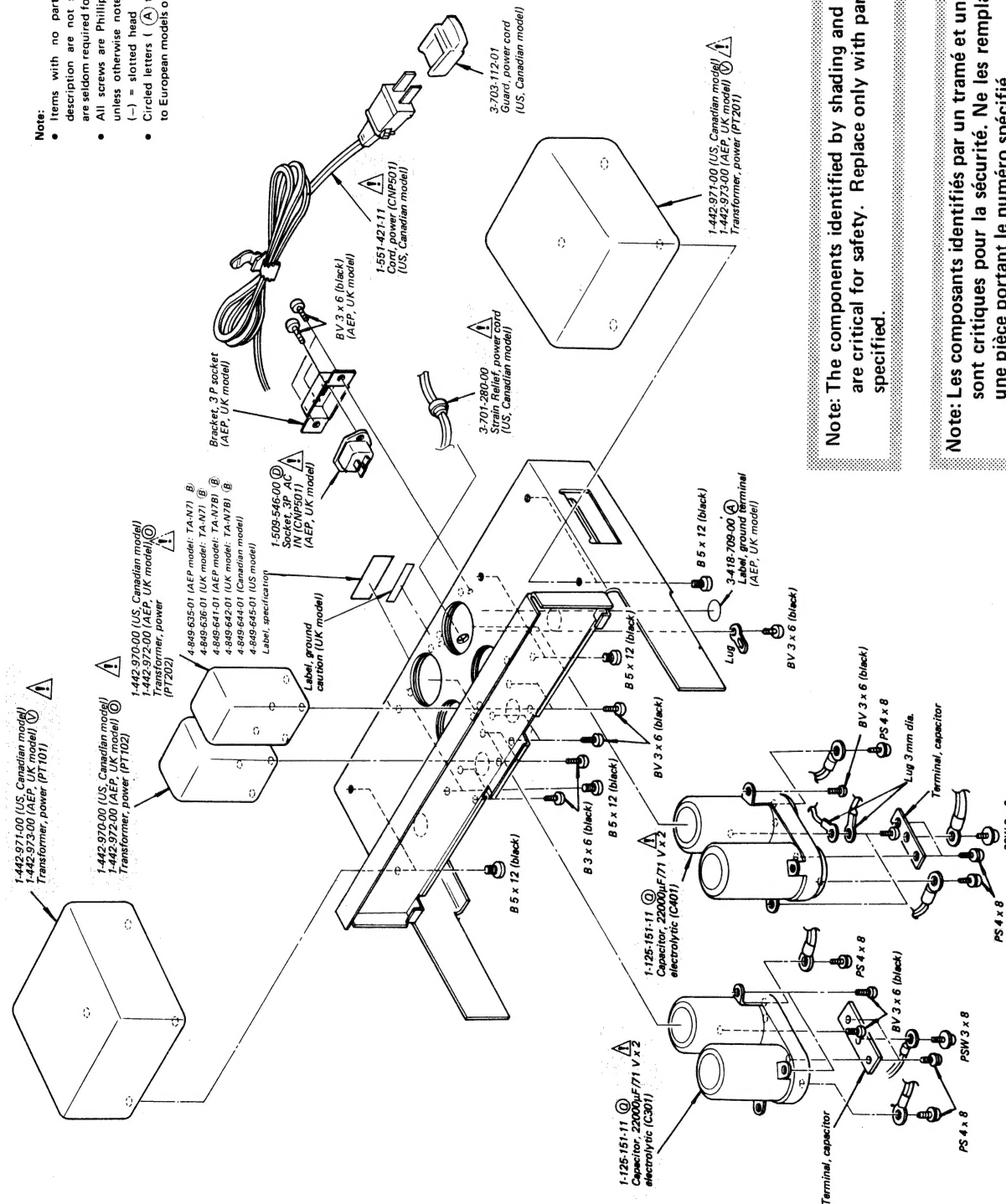


SECTION 6
ELECTRICAL PARTS LIST

5-4.

E
D
C
B
A

Note:
• Items with no part number and/or no description are not stocked because they are seldom required for routine service.
• All screws are Phillips (cross recess) type unless otherwise noted.
• (—) = slotted head
• Circled letters (A) to (Z) are applicable to European models only.



Note: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No. Part No. Description

SEMICONDUCTORS
Transistors

Q101, 201	8-727-788-00	(C)	2SA678
Q102, 202			
Q103, 203	8-729-203-04	(B)	2SK30A
Q104, 204			
Q105, 205	8-765-342-10	(F)	2SK97
Q106-108	8-720-950-03	(D)	2SC926A
Q206-208			
Q109, 209	8-729-163-93	(C)	2SA639S
Q110, 210	8-765-082-20	(C)	2SA896
Q111, 211	8-765-170-01	(E)	2SC1962
Q130, 230			
Q131, 231	8-762-020-00	(E)	2SA835
Q132-134	8-762-355-00	(J)	2SK60
Q232-234			
Q135-137	8-729-217-33	(C)	2SC1173
Q235-237			
Q138-140	8-729-247-33	(C)	2SA473
Q238-240			
Q141-143	8-762-455-00	(K)	2SJ18
Q241-243			
Q144, 244	8-727-788-00	(C)	2SA678
Q145, 245	8-729-663-47	(B)	2SC1364
Q146, 246			
Q147, 247	8-727-788-00	(C)	2SA678
Q151-154	8-729-663-47	(B)	2SC1364
Q251-254			
Q161, 261	8-727-312-00	(C)	2SK42-2
Q162, 262			
Q163, 263	8-729-316-12	(D)	2SC1061
Q164, 264	8-729-663-47	(B)	2SC1364
Q165, 265			
Q166, 266	8-727-788-00	(C)	2SA678
Q167, 267			
Q168, 268	8-729-317-12	(E)	2SA671
Q501, 502	8-729-663-47	(B)	2SC1364

• \Rightarrow : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.

• Circled letters (A) to (Z) are applicable to European models only.

Ref. No. Part No. Description

Diodes

D101, 201	8-719-912-00	(B)	MV12N
D102, 202			
D103, 203	8-719-300-11	(C)	SV04S
D130-133	8-719-815-55	(B)	1S1555
D230-233			
D151, 251	8-719-200-02	(B)	10E2
D152, 252	8-719-200-02	(B)	10E2
D154, 254	8-719-422-21	(B)	1T22AM
D161, 261	8-719-930-11	(B)	EQB01-11Z
D162, 262			
D301, 401	8-719-505-20	(F)	S5VB20
D351-354	8-719-200-02	(B)	10E2
D451-454			

Thermistor

PTH 151	1-800-427-00	(B)	positive
PTH 251			

CAPACITORS

All capacitors are in μ F and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics. pF = μ F, elect = electrolytic

C101, 201	1-130-083-11	(C)	1	100V	polyethylene
C102, 202	1-103-775-11	(A)	0.001		polystyrol
C103, 203	1-102-947-11	(A)	10p		
C104, 204	1-103-775-11	(A)	0.001		polystyrol
C106, 206	1-102-963-11	(A)	33p		
C107, 207	1-102-947-11	(A)	10p		
C108, 208	1-108-239-12	(A)	0.01		mylar
C109, 209	1-131-217-11	(B)	2.2	35V	tantalum
C110, 210	1-108-234-12	(A)	0.0047		mylar
C111, 211					
C112, 212	1-102-947-11	(A)	10p		
C130, 230	1-123-187-11	(A)	10	25V	elect
C131, 231					
C132, 232	1-108-239-12	(A)	0.01		mylar
C133, 233					

Note: Les composants identifiés par un trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

TA-N7/N7B TA-N7/N7B

• Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
C134, 234	1-108-244-12 (A)	0.033 mylar
C135-140	1-108-847-12 (A)	0.068 mylar
C235-240		
C141, 241	1-103-755-11 (A)	150p polystyrol
C142, 242	1-108-246-12 (A)	0.047 mylar
C151, 251	1-123-081-11 (B)	22 100V elect
C152, 252	1-123-072-11 (B)	220 10V elect
C153, 253	1-123-196-11 (A)	100 10V elect
C162, 262	1-123-255-11 (B)	4.7 100V elect
C163, 263		
C165, 265	1-121-423-11 (B)	220 50V elect
C166, 266		
C301, 401	1-125-151-11 (Q)	22000+22000 71V elect
C303, 403	1-123-262-11 (E)	1000 63V elect
C304, 404		
C305, 405	1-130-084-11 (D)	2.2 100V polyethylene
C306, 406		
C307, 407	1-121-479-11 (A)	22 16V elect
C501	1-123-195-11 (A)	47 10V elect

RESISTORS

All resistors are in ohms and 1/2W carbon unless otherwise noted.

R101, 201	1-244-914-11 (A)	51k
R102, 202	1-244-873-11 (A)	1k
R103, 203	1-244-913-11 (A)	47k
R104, 204	1-244-921-11 (A)	100k
R105, 205	1-244-873-11 (A)	1k
R106, 206	1-244-881-11 (A)	2.2k
R107, 207	1-244-893-11 (A)	6.8k
R108, 208	1-244-873-11 (A)	1k
R109, 209	1-244-921-11 (A)	100k
R110, 210	1-244-913-11 (A)	47k
R111, 211	1-244-856-11 (A)	200
R112, 212	1-244-925-11 (A)	150k
R113, 213	1-244-889-11 (A)	4.7k
R114, 214	1-244-897-11 (A)	10k
R115, 215	1-244-873-11 (A)	1k

Note: The components identified by shading and A mark are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
R116, 216	1-244-897-11 (A)	10k
R117, 217	1-244-905-11 (A)	22k
R118, 218	1-244-882-11 (A)	2.4k
R119, 219	1-244-905-11 (A)	22k
R120, 220	1-212-889-11 (A)	220 1/2W fusible
R121, 221		
R122, 222	1-212-873-11 (A)	47 1/2W fusible
R123, 223	1-244-897-11 (A)	10k
R124, 224		
R125, 225	1-212-889-11 (A)	220 1/2W fusible
R126, 226	1-244-921-11 (A)	100k
R127, 227	1-212-950-11 (A)	4.7 1/2W fusible
R128, 228	1-244-633-11 (A)	22 1/2W
R130, 230	1-244-897-11 (A)	10k
R131, 231		
R132, 232	1-244-881-11 (A)	2.2k
R133, 233		
R134, 234	1-212-982-11 (A)	100 1/2W fusible
R135, 235	1-212-990-11 (A)	220 1/2W fusible
R136, 236	1-212-982-11 (A)	100 1/2W fusible
R137-139	1-212-893-11 (A)	330 1/2W fusible
R237-239		
R140-145	1-217-158-11 (A)	0.47 5W metal oxide
R240-245		
R146-148	1-212-893-11 (A)	330 1/2W fusible
R246-248		
R149, 249	1-206-459-11 (A)	6.8 2W metal oxide
R150, 250		
R151, 251	1-244-913-11 (A)	47k
R152, 252	1-244-885-11 (A)	3.3k
R153, 253	1-206-657-11 (A)	510 2W metal oxide
R154, 254	1-244-915-11 (A)	56k
R155, 255	1-244-857-11 (A)	220
R161, 261	1-212-857-11 (A)	10 1/2W fusible
R162, 262	1-244-853-11 (A)	150
R163, 263	1-244-891-11 (A)	5.6k
R164, 264	1-244-885-11 (A)	3.3k
R165, 265	1-244-890-11 (A)	5.1k

Note: Les composants identifiés par un tramé et une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
R166, 266	1-212-857-11 (A)	10 1/2W fusible
R167, 267	1-244-853-11 (A)	150
R168, 268	1-244-873-11 (A)	1k
R169, 269		
R301, 401	1-244-910-11 (A)	36k
R501, 502	1-217-160-11 (B)	1 5W metal oxide
R503	1-244-718-11 (A)	75k 1/2W (US, Canadian model)
	1-244-925-11 (A)	120k (AEP, UK model)
R504, 505	1-244-906-11 (A)	24k
R506	1-244-909-11 (A)	33k
R507	1-244-873-11 (A)	1k
RV101, 201	1-224-247-XX (C)	100 adjustable, DC balance
RV102, 202	1-224-253-XX (C)	22k adjustable, DC bias

SWITCH

S501	1-552-141-12 (E)	Pushbutton, POWER (AEP, UK model)
	1-552-246-11	Pushbutton, POWER (US, Canadian model)

MISCELLANEOUS

CB301, 401	1-532-523-11	Circuit Breaker, 4A (US, Canadian model)
	1-532-531-11 (C)	Circuit Breaker, 2A (AEP, UK model)
CNP501	1-509-546-00 (D)	Socket, 3p AC IN (AEP, UK model)
	1-551-421-11	Cord, power (US, Canadian model)
CP301, 303	1-102-355-11 (B)	Encapsulated Component
CP401, 403	1-231-326-11	Encapsulated Component (US model)
CR501	1-231-341-00	Encapsulated Component (Canadian model)
F501	1-532-496-00 (C)	Fuse, 109°C, 10A
J101, 201	1-507-378-21 (B)	Jack, 2p; C-COUPLED, DIRECT
J102, 202		
L131, 231	1-420-879-00 (B)	Coil, 3.3μH
NL501	1-519-139-00 (B)	Neon Lamp, power
PT101, 201	1-442-971-00	Transformer, power (US, Canadian model)
	1-442-973-00 (V)	Transformer, power (AEP, UK model)
PT102, 202	1-442-970-00	Transformer, power (US, Canadian model)
	1-442-972-00 (O)	Transformer, power (AEP, UK model)
RY151, 251	1-515-293-00 (H)	Relay
RY501	1-515-278-00 (F)	Relay
TM131	1-535-195-21 (F)	Terminal Strip 2p; LEFT SPEAKER
TM231	1-535-195-31 (F)	Terminal Strip 2p; RIGHT SPEAKER
	1-525-186-00 (B)	Socket, transistor
	1-536-392-XX (B)	Terminal, lug

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ACCESSORIES & PACKING MATERIALS

Part No.	Description
1-534-819-12 (G)	Cord, power (UK model)
3-701-622-00 (A)	Bag, plastic (UK model)
3-701-630-00 (A)	Bag, plastic; printed matters
3-770-058-21	Manual, instruction (US model)
3-770-058-21	Manual, instruction (Canadian model)
3-794-245-31	Manual, instruction (AEP, UK model)
3-770-441-11 (H)	Manual, instruction (AEP, UK model)
4-848-648-00 (B)	Bag, protection; set
4-849-622-00 (C)	Cushion (A)
4-849-623-00 (C)	Cushion (B)
4-849-637-00 (F)	Carton (TA-N7)
4-849-638-00 (C)	Spacer
4-849-639-00 (C)	Cushion, lower
4-849-643-00 (G)	Carton (TA-N7B)

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